Claims

[c1]   What is claimed is:

1. A system of dynamically generating an interface comprising:

a hierarchical organization data file defining a hierarchical organization of each subsystem of a medical imaging device;

at least one parsing component to extract configuration parameter names from the data file and generate a graphical representation of the hierarchical organization of the medical imaging device; and

a configuration servlet to extract configuration parameters of the medical imaging device and associate the configuration parameters with the graphical representation of the hierarchical organization and display the configuration parameters and graphical representation of the organization in a single user interface, wherein the configuration parameters can be reviewed and edited in the single user interface.

[c2]   2. The system of claim 1 further comprising a layout information data file to map the configuration parameters to user defined layout preferences.

[c3]   3. The system of claim 2 wherein the at least one parsing component is configured to parse the layout information data file into rows and columns corresponding to the configuration parameters.

[c4]   4. The system of claim 2 wherein the configuration servlet displays the graphical representation of the configuration parameters according to the user defined layout preferences.

[c5]   5. The system of claim 1 further comprising an access rights data file defining specific configuration parameters that a current user is permitted to view wherein the at least one parsing component parses the access rights data file and the configuration servlet displays the graphical representation of the configuration parameters according to the access rights data file.

[c6]   6. The system of claim 5 wherein the configuration parameters are hidden if the current user is not permitted to view specific configuration parameters.

[c7]   7. The system of claim 1 wherein the hierarchical organization data file further defines data to generate links to data that is external from the medical imaging device.

[c8]   8. The system of claim 1 wherein the configuration pa-

rameters are extracted from distributed object computing infrastructure components.

[c9] 9. The system of claim 1 wherein the single user interface is a web-based interface capable of being displayed in a web browser.

[c10] 10. The system of claim 1 wherein the configuration servlet extracts the configuration parameters by requesting the configuration parameter names.

[c11] 11. The system of claim 10 wherein the configuration servlet extracts the configuration parameters by requesting the configuration parameters from distributed object computing infrastructure components that store the configuration parameters.

[c12] 12. The system of claim 11 wherein multiple graphical representations for each configuration parameter is selectable.

[c13] 13. The system of claim 1 further comprising an XML control file setting forth each of a plurality of data types to a manner of displaying each of the data types.

[c14] 14. The system of claim 1 wherein the at least one parsing component is an XML parsing component.

[c15] 15. The system of claim 14 wherein the at least one

parsing component is further configured to extract HTML tags from the layout data file and wherein the configuration servlet is further configured to replace a section of the HTML tag with the configuration parameters to display the configuration parameters and the graphical representation of the configuration parameters in the manner specified by an XML control file.

[c16]   16. The system of claim 1 further comprising a validation tool to dynamically validate user input into the user interface, wherein the validation tool includes a number of validation functions and wherein the configuration servlet assigns names to the number of validation functions.

[c17]   17. The system of claim 16 wherein the user input into the user interface is validated based upon the validation function names.

[c18]   18. The system of claim 16 wherein the configuration servlet assigns names to the number of validation functions at a startup of the medical imaging device.

[c19]   19. The system of claim 16 wherein the number of number of names the configuration servlet assigns to the number of validation functions is dependent upon the number of configuration parameters.

[c20] 20. The system of claim 16 wherein information for generating the validation function names is stored in the hierarchical organization data file.

[c21] 21. The system of claim 16 wherein the at least one parsing component extracts the information for generating the validation function names from the hierarchical organization data file.

[c22] 22. A method of dynamically generating an interface comprising:

defining a hierarchical organization of subsystems of a medical imaging device in a hierarchical organization data file;

extracting configuration parameter names from the hierarchical organization data file;

extracting configuration parameters of the medical imaging device;

generating a graphical representation of the hierarchical organization of the medical imaging device;

associating the configuration parameters with the graphical representation of the hierarchical organization; and

displaying the configuration parameters and the graphical representation of the hierarchical organization in a single user interface wherein the configuration parameters can be reviewed and edited in the single user inter-

face.

[c23]   23. The method of claim 22 further comprising:
mapping configuration parameter layout data from the
configuration parameters to user defined layout prefer-
ences; and
storing the configuration parameter layout data in the
hierarchical organization data file.

[c24]   24. T he method of claim 23 wherein the displaying of
the configuration parameters is based on an XML control
file and the graphical representation of the hierarchical
organization is based on the layout information data file.

[c25]   25. The method of claim 22 further comprising:
defining specific configuration parameters that a current
user is permitted to view; and
storing the specific configuration parameters that a cur-
rent user is permitted to view in an access rights data file
and displaying the configuration parameters and the
graphical representation of the hierarchical organization
according to the access rights data file.

[c26]   26. The method of claim 22 further comprising display-
ing links to data that is external from the medical imag-
ing device as links in the single user interface so that a
user can review additional information stored externally

from the medical imaging system.

[c27]   27. The method of claim 22 wherein the configuration parameters are extracted from distributed object computing infrastructure components.

[c28]   28. A medical imaging scanner comprising:

a plurality of subsystems to execute one or more imaging applications; and

a computer programmed to:

define a hierarchical organization of the subsystems of a medical imaging scanner in a hierarchical organization data file, wherein sections map to the subsystems, and subsections map to further micro-subsystems;

extract configuration parameter names from the hierarchical organization data file;

extract configuration parameters of the medical imaging scanner;

generate a graphical representation of the hierarchical organization of the medical imaging scanner;

associate the configuration parameters with the graphical representation of the hierarchical organization; and

display the configuration parameters and the graphical representation of the hierarchical organization in a single user interface wherein the configuration parameters can be reviewed and edited in the single user interface.

[c29]   29. The medical imaging scanner of claim 28 wherein the computer is further programmed to:

map a configuration parameter layout data from the configuration parameters to user defined layout preferences;

parse the layout data file into rows and columns corresponding to the configurations parameters; and

store the configuration parameter layout data in a hierarchical organization data file.

[c30]   30. The medical imaging scanner of claim 29 wherein computer is further programmed to:

extract HTML tags from the layout data file; and

replace a section of the HTML tag with the configuration parameters to display the configuration parameters and the graphical representation of the configuration parameters in the manner specified by an XML control file.

31. The medical imaging scanner of claim 29 wherein computer is further programmed to display of the configuration parameters and the graphical representation of the hierarchical organization is based on the layout data file.

[c31]

[c32]   32. The medical imaging scanner of claim 28 wherein the computer is further programmed to define specific con-

figuration parameters that a current user is permitted to view.

[c33]   33. The medical imaging scanner of claim 28 wherein computer is further programmed to store the specific configuration parameters that a current user is permitted to view in an access rights data file and display the configuration parameters and the graphical representation of the hierarchical organization according to the access rights data file and hide the configuration parameters from display if the current user is not permitted to view specific configuration parameters.

[c34]   34. The medical imaging scanner of claim 28 wherein computer is further programmed to display links to data that is external from the medical imaging system as HTTP links in the single user interface so that a user can review additional information stored externally from the medical imaging system.

[c35]   35. The medical imaging scanner of claim 28 wherein the computer is further programmed to extract the configuration parameters from distributed object computing infrastructure components.

[c36]   36. The medical imaging scanner of claim 28 wherein the single user interface is a web-based interface capable of

being displayed in a web browser.

[c37] 37. The medical imaging scanner of claim 28 wherein the computer is further programmed to dynamically validate user input into the single user interface.

[c38] 38. The medical imaging scanner of claim 37 wherein the user input into the user interface is validated based upon the configuration parameter names.

[c39] 39. A computer readable storage medium having stored thereon a computer program comprising instructions which, when executed by at least one processor, cause the at least one processor to:

define a hierarchical organization data file wherein sub-systems of a medical imaging scanner map to sections and micro-systems map to subsections of the medical imaging scanner;

extract configuration parameters of the medical imaging scanner from the medical imaging scanner;

generate a graphical representation of the hierarchical organization of the medical imaging scanner;

associate the configuration parameters with the graphical representation of the hierarchical organization; and

display the configuration parameters and the graphical representation of the hierarchical organization in a single user interface wherein the configuration parameters

can be reviewed and edited in the single user interface.

[c40]   40. The computer readable storage medium of claim 39 wherein the at least one processor is further caused to: map configuration parameter layout data from the configuration parameters to user defined layout preferences; and

store the configuration parameter layout data in the hierarchical organization data file.

[c41]   41. The computer readable storage medium of claim 39 wherein displaying the configuration parameters and the graphical representation of the hierarchical organization is based on the layout information data file.

[c42]   42. The computer readable storage medium of claim 39 wherein the at least one processor is further caused to display links to data that is external from the medical imaging system as HTTP links in the single user interface so that a user can review additional information stored externally from the medical imaging system.

[c43]   43. The computer readable storage medium of claim 39 wherein the configuration parameters are extracted from distributed object computing infrastructure components.

[c44]   44. The computer readable storage medium of claim 39 wherein the at least one processor is further caused to

dynamically validate user input into the user interface.

[c45] 45. The computer readable storage medium of claim 44 wherein the user input into the user interface is validated based upon configuration parameter names.